

Minimum Specifications for Fabric Structures

The following provides a guide to specifications that commercial purchasers of fabric structures should consider when obtaining tenders or quotations for fabric structure projects.

SPECIFICATIONS	OUTCOME
1 DETERMINING STRUCTURE SIZE	
<ol style="list-style-type: none"> Determine size of the area to be covered. What assets are to be protected and area shaded. Consider seasonal sun movement to determine the required size of shaded area. Where can footings and posts go within the parameters and limitations of the site. Allowance for fall zones around playground equipment, e.g. may be up to 2.5m. 	<ul style="list-style-type: none"> To determine the right sized structure to achieve the desired and most effective shading levels. Assessing the constraints of the site will assist in knowing what can be designed.
2 DESIGN	
<p>Shapes and prices of Fabric Structures</p> <ol style="list-style-type: none"> Hypars, freeform sails, hip ridge (cheaper). Conic, umbrella. Inverted conic. Barrel vault, cantilevered. Unique architectural designs (dearer). <p>Efficiency of design</p> <ol style="list-style-type: none"> Single sail or multi sails. Triangle versus rectangle shapes. Cost effective design. <p>Shadow Diagrams</p> <ol style="list-style-type: none"> When is shade required eg Early to mid morning or noon to late afternoon. Diagrams showing changing shade by season. <p>Natural shade and shade from existing buildings</p> <ol style="list-style-type: none"> Utilise shade available. Impact of nearby buildings on structure. Impact of structure to nearby buildings. <p>Water</p> <p>Adequate roof pitch and guttering if required for structure to shed and dispose of water.</p>	<ul style="list-style-type: none"> To select the design most suitable to the specific project. Prices will vary according to design. To weigh up aesthetics against practicality in the design criteria. The structure should provide shade daily and seasonally as needed. Incorporate existing shade to maximise the shade benefit. Correct pitch ensures the structure does not hold water.
3 FABRICS	
<ol style="list-style-type: none"> Choice of shade cloth or PVC meshes for shade or solid PVC fabric for rain protection and shade. Brand. Tear strength and bursting pressure. Fire retardancy. Ultra violet radiation protection - 90%UVR. Colour range. 	<ul style="list-style-type: none"> Fabrics are available in many qualities. Ensure all properties are considered in fabric choice. UVR is only one of many criteria to consider.
4 ENGINEERING	
<ol style="list-style-type: none"> Determine if council approval/permit is required. Engineering from certified engineer to be supplied showing steel & footing detail. Plan view, sections and elevations as required. Final engineering sign off as required. Local wind loads clearly identified. Identify if fabric skin needs to be pulled down. May apply in cyclonic wind zones. 	<ul style="list-style-type: none"> Structure is properly engineered and compliant.

SPECIFICATIONS	OUTCOME
5 STANDARDS	
<p>AS1170.2 Structural design actions. Wind Actions. AS1530 Fire tests on building materials. AS/NZ 2311 Painting. AS2870 Residential slabs and footings. AS3798 Excavation. AS4174 Synthetic shade cloth - review 2014. AS4100:1998 Steel structures code.</p>	<ul style="list-style-type: none"> • No one standard applies for fabric structures. • Many standards will apply to the design, manufacture and installation of a fabric structure.
6 FABRICATION	
<p>Sewing - Shade cloth Select strong sewing thread for shade cloth.</p> <p>Welding - PVC The usual joining system is high frequency welding. Sewing of seams or hems is unacceptable.</p> <p>Fittings & Cabling</p> <ol style="list-style-type: none"> 1. Stainless steel shackles, eye bolts, etc 2. Galvanised option. 3. Gauge of components. 4. Size of cable to suit job. <p>Paint treatment</p> <ol style="list-style-type: none"> 1. Hot dipped galvanising. 2. Painted treatments, e.g. powder coating, industrial enamels or multi processes. 	<ul style="list-style-type: none"> • Sewing thread is the weakest part of a shade cloth sail. Teflon thread is long lasting. • PVC must be welded for strength and durability. • Fittings and cable should be a suitable gauge for the size of the skin as per engineering. • To ensure quality steel finish and colour. A galvanised base ensures durability. Powder coating is cosmetic and scratches easily without additional treatments.
7 SAFETY	
<p>Public Risk and Vandalism</p> <ol style="list-style-type: none"> 1. Assess public risk. 2. Consider anti vandal measures, e.g. signs and warning stickers on posts, fences, tall posts, sail to be 2m above tallest playground equipment or fences, anti climbing guards or a band of non drying paint near top of pole. <p>Installation of structure</p> <ol style="list-style-type: none"> 1. Workplace health and safety. 2. Safe work method statements (SWMS). 	<ul style="list-style-type: none"> • Minimise public access and public risk to shade sail. • Controls can be built into the structure to minimise access. • To ensure workplace health and safety for the public and for installers is considered.
8 INSURANCE	
<p>Contractors Currency certificates for:</p> <ol style="list-style-type: none"> 1. Workers compensation insurance. 2. Public liability. 3. Professional indemnity. <p>Sub contractors Sub contractor certificates.</p>	<ul style="list-style-type: none"> • Ensure the contractor has current insurances in place. • Ensure all workers have current insurances.
9 WARRANTY	
<ol style="list-style-type: none"> 1. Contractor to provide warranties as applicable; <ul style="list-style-type: none"> • Statutory warranty • Materials warranties • Fabric warranties are reducing UV warranties only. 2. Maintenance plans to protect warranties. 	<ul style="list-style-type: none"> • Warranties may vary for different components of the structure.
10 MAINTENANCE	
<ol style="list-style-type: none"> 1. Annual inspections with inspection report. 2. Availability of a maintenance and care plan by installer. 3. Contact details available for future servicing. 	<ul style="list-style-type: none"> • Maintenance ensures the structure is sound, strong and problems identified and rectified early. Neglect of structure maintenance may affect warranties.